

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/092768 A2

- (51) International Patent Classification⁷: G01T
- (21) International Application Number: PCT/US2004/011153
- (22) International Filing Date: 12 April 2004 (12.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/412,736 11 April 2003 (11.04.2003) US
10/412,723 11 April 2003 (11.04.2003) US
10/412,751 11 April 2003 (11.04.2003) US
- (71) Applicant (for all designated States except US): FISCHER IMAGING CORPORATION [US/US]; 12300 North Grant Street, Denver, CO 80241 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): TESIC, Mike

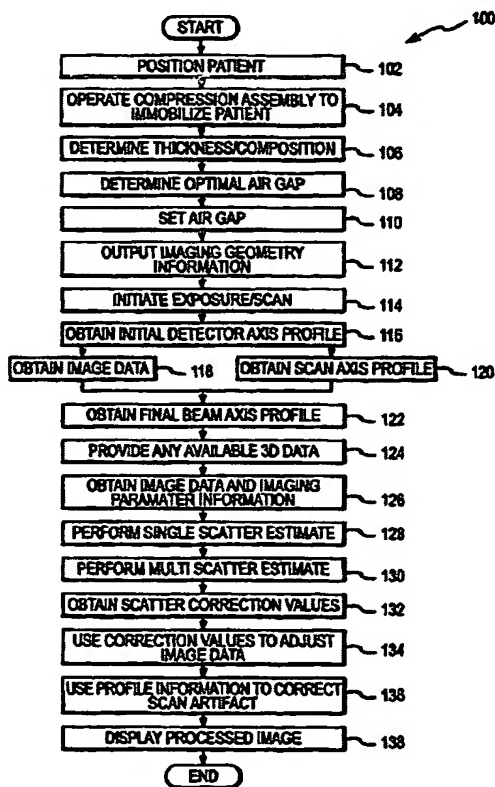
[US/US]; 2545 Briarwood Drive, Boulder, CO 80305 (US). BESSON, Guy, M. [FR/US]; 1672 Emerald Street, Broomfield, CO 80020 (US). NIELDS, Morgan, W. [US/US]; #4 Sunrise Drive, Englewood, CO 80110 (US).

(74) Agent: MARSH, Thomas, R.; Marsh Fischmann & Breyfogle LLP, 3151 South Vaughn Way, Suite 411, Aurora, CO 80014 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: SCATTER REJECTION FOR COMPOSITE MEDICAL IMAGING SYSTEMS



(57) Abstract: Scatter effects are reduced in a radiographic imaging device, such as a digital slot scan mammographic imaging device, by reducing detected scatter and processing detector information to compensate for scatter effects. In one embodiment, a digital mammographic imaging system (10) includes a source (24) for transmitting a narrow beam (28) and a detector assembly (32) for detecting the beam (28). The beam (28) and the detector assembly (32) are synchronously scanned across the patient's breast (48) to obtain an image. Collimator slats (74) are provided at the leading and trailing edges of the detector to reduce detected scatter. Additionally, attenuators (76 and 92) are provided at the ends of the scanned motion and at the anterior edge of the detector array to assist in determining a spatial intensity profile. The spatial intensity profile information together with other imaging signal and patient dependent parameters are used in image processing to estimate and compensate for various scatter effects including single and multiple scatters and Compton and Rayleigh scatter.